

THE USE OF ELECTRICITY IN THE FARM HOME

Demonstration Methods and Techniques

The following outline may be used as a guide in discussing methods and techniques to use in presenting a demonstration on the use of electric appliances in the farm home.

I. OBJECTIVE:

To present some of the techniques in developing a demonstration.

II. PLATFORM SETUP:

Have equipment arranged for an over-all demonstration.

III. DISCUSSION:

A. The Demonstration.

The word "demonstration" means a showing or proving by word and by action. The method of teaching by demonstration has become one of the accepted methods in the technique of learning. Seeing, hearing, discussing and doing, is a simple and interesting way to get results for remembering facts.

Always decide what the objective is to be, and have a clear understanding of how you are going to carry it out.

B. Reasons for giving a demonstration.

1. The ultimate reason for giving the "over-all" demonstration is to sell a definite idea on the use of electricity to a group of prospective consumers. Electricity is a new tool and a new experience; therefore, the interests of the group may be varied.

a. This specific type of demonstration meets the needs of the large group, in that it arouses interest in the immediate practice and develops from this to a wider interest.

b. The type information given with the demonstration is a brief summary of pertinent facts on each appliance, without spending too much time on any one piece.

2. The approach -- There are many different avenues of approach which may be used. For example, when giving a range demonstration, the subject matter may be planned to:

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- a. Impart facts -- on meeting the family needs (in all type homes there is the need of some kind of cooking appliance). Points on selection, operation and care, advantages in cost and dependability of the range, answer this problem.
 - b. Teach a cooking process such as baking.
 - c. Creating a desire for electric cookery.
 - d. Illustrate the technique -- either with the equipment itself or with the food used in showing the operation of the appliance.
3. Results -- To secure good results, the major points are stressed and the minor points are in the background; such as the range, the appliance is the major point, the food used in operation, the minor.

C. Organization.

1. Written Outline -- It is most important to carefully outline the demonstration on paper, writing just what is going to be done and what is to be said.
2. Time -- Plan to start the demonstration on time, and end the demonstration on time.
3. Properties -- "A behind the scenes with the demonstration."
 - a. List of equipment and illustrative material.
 - b. Plan of the platform.
 - (1) Placement of equipment.
 - (2) Cleaning, checking and testing the equipment.
 - c. Market order.
 - d. Food preparation.
 - e. Personal appearance and personality.

Be appropriately and comfortably dressed, so that you may be at ease with the audience. Look the part and be pleasant in manner.

- f. Platform appearance.

D. The Introduction.

1. The purpose of the introduction is to set out the plan to be accomplished, and to welcome the guests.
2. Accept the introduction to the platform -- start talking only after getting completely on the platform. Look at the audience, allowing time for them to become attentive -- with the very first sentence, start gaining the confidence of the audience.
3. Tell the audience what you are going to tell them. This may be strengthened by the use of charts, such as a list of the advantages of electric cookery -- clean, cool, dependable, healthful, safe and economical.
4. Printed material, if such has been distributed, mention should be made of it.
5. With one good strong sentence, introduce the demonstration.

E. The Demonstration.

1. Basic purpose.
2. Type proofs. -- Every advantage of the appliance should be proved. Give enough information to prove the point, and no more, as long drawn-out explanations tend to tire the audience.
 - a. Suggestive proofs -- construction of appliances.
 - b. Mechanical proof -- printed information (USDA bulletins or others), experience of others, visual demonstration.

Always keep in mind what the proof is; for example, a cake is baked to show the certainty and accuracy of cooking in the automatic electric oven, not to teach that the sugar and butter are creamed.

3. Work with ease. Make the work appear simple and natural, and show that you are enjoying it.
4. Keep all working spaces clean.
5. Work quickly, but not hurriedly.
6. Disturbance -- stop a few seconds until the attention of the audience is recaptured.

7. Have timing of foods quite definite, so that all the food in the range, refrigerator and roaster will be done at about the same time -- ready at the end of the program, so that the cooking results may be shown clearly.

F. Summary.

1. Briefly summarize what you have told them, recall the points that were mentioned in the introduction. Retell the audience what you have proved.
2. Call on the audience as to whether or not you have proved the points. Have the listeners comment.
3. Have all foods set up attractively, ready to display at the end of the program.
4. Sum up the final points forcefully and dramatically. There should be as much enthusiasm at the conclusion of the demonstration as in the beginning.

ELECTRIC REFRIGERATOR

SELECTION, OPERATION, AND CARE POINTS

NOTES

REFRIGERATION CYCLE:

Heat in refrigerator passes to cooler evaporator and is absorbed by refrigerant as liquid refrigerant changes to gas. Gas compressed by compressor cools in condenser to liquid, giving off heat to outside air. Liquid refrigerant returns to evaporator, vaporizes. Cycle repeats. Thermostatic control is used to start or stop motor operating compressor, holding temp. set.

FACTORS IN REFRIGERATED FOOD PRESERVATION:

Condition of food	Relative humidity
Storage temperature	Storage time
Air circulation	Storage techniques

ADVANTAGES OF ELECTRIC REFRIGERATION:

1. Retards growth of yeast, mold, bacteria
2. Slows action of enzymes
3. Adds variety, attractiveness, palatability
4. Saves homemaker's time and energy
5. Saves money on: left-overs, spoilage, operating cost, excess produce, special sales, quantity buying & cooking, trips
6. May increase income
7. Improves family health

POSSIBLE REPRODUCTION RATE OF 1 BACTERIUM

No. of Hours	No. of Bacteria
1	4
2	16
3	64
8	65,536
15	1,000,000,000

RETENTION OF VITAMINS:

	In Refrigerator	At Room Temp.
A	Little loss	Gradual loss
B1	Stable	Stable
B2	No loss by light	Loss from light
C	Little loss	Great loss
D	Stable	Stable

REFRIGERATE PRODUCE FOR:

Home usage:

Short period: hours, day, week
Longer time: around 0° F.

Market:

Short period: milk, poultry, veg's.
Longer time: 32-50°- veg's., fruit
Undeveloped freezing possibilities

TYPES OF REFRIGERATORS:

1. Household refrigerator
 - Combination, two-temperature or two-compartment (small storage-freezer & high-humidity section)
 - Standard or conventional
 - 2- or 4-door commercial- or institutional-type
2. Home freezer (separate zero box; primarily for storage or with freezing compartment separate)
 - Chest or horizontal type
 - Upright or vertical type
3. Reach-in farm refrigerator with freezer
4. Walk-in refrigerator with or without freezer
5. Milk cooler; specialized cabinets for varied uses
6. Community chillroom for market or home use
7. Cold storage locker plant

ADVANTAGES OF HIGH HUMIDITY:

1. Food can be stored uncovered
2. Vitamin retention is greater
3. Odor transfer is reduced
4. More food can be stored ($1\frac{1}{2}$ -2X)
5. Lower temp. is maintained

Problems

1. Proper control of humidity
2. Higher initial cost
3. Higher operation cost

SELECTION OF HOUSEHOLD REFRIGERATOR:

Type: Combination or standard; home size or institutional

Size: 6 cu. ft. for two & 1 cu. ft. for each extra two
7 cu. ft. for two & 1 cu. ft. for each extra one
allows fuller use, more saver of time, energy

Storage: Space for frozen foods, meats, cream or milk,
veg's., fruits, eggs, advance food preparation

Adjustable features - convenience vs. cost

Feature and cost comparison: economy, standard, deluxe

Door opening properly for location

6 CU. FT. REFRIGERATOR REQUIRES FOR

MONTHLY OPERATION APPROXIMATELY:

Ice	700* lbs.
Electricity	30 kwh.
Kerosene	15 gal.
Natural gas	1,000 cu. ft.
Mfg. gas	1,800 cu. ft.

CABINET:

Dimensions--wide, shallow

Steel--electrically welded, bonderized

Exterior--baked-on synthetic enamel
porcelain enamel

Interior--acid-resisting procelain enamel at least

in bottom, seamless, rounded corners, light

Door--tight-fitting, soft gasket, breaker strips

Hardware--rust-resistant, convenient, sturdy

* Recent Iowa State College study shows 480 lbs.

SHELVES:

Rust-resistant:

Glass; aluminum Stainless steel
Chromium-plated Tin-dipped steel
Sturdily constructed
Closely spaced bars or diamond mesh
Conveniently spaced in box
Easily removed and replaced
Adjustable height--removable sections
Safety bars & locks if sliding

INSULATION--CONSIDER:

Thickness--minimum, 2"; 3" or 4" best
Conductivity--low
Moisture resistant--proofed or encased
Vibration stability
Freedom from odor
Resistant to mold and vermin

MECHANISM--REFRIGERANT:

Refrigerant: Low and high pressure
Evaporator: Flooded or dry
Motor: Sealed or open
Compressor: Rotary or reciprocating
Condenser: Radiator or plate
Temp. control: Thermostat or pressure

LOCATION OF REFRIGERATOR:

In preparation center - counter nearby
In cool place
 Not below 60°-65°F.
 Not too near stove
 Not in sunshine
 Away from heating units
In dry place
Air circulation good: 2½" at back
 8-12" above
Level - door should stay open anywhere

OPERATION OF REFRIGERATOR:

1. Maintain cabinet temperature about 40°F.*
 2. Use thin containers; cover**
 3. Use clean containers; wipe cans, bottles
 4. Wash and drain veg's., fruits; don't soak
 5. Cool hot foods before storing usually
 6. Assemble things to be put in refrigerator
 7. Place most-used foods near front
 8. Allow space for air circulation**
 9. Wet bottom of tray for fast freezing
 10. Fill trays to ¼" of top
 11. Reset after freezing and defrosting
 12. Take several foods out at once
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* Check with thermometer in morning (or with door closed at least 1 hour before reading); nowhere should temperature be over 50°.

** Not so necessary in high-humidity section of combination household refrigerator.

SAVING TIME WITH THE REFRIGERATOR:

Biscuit mixture	Sandwich spreads
Pastry mixture	Sandwiches, lunches
Ref. roll dough	White
Ref. cookie dough	Sauces: Cheese
Cake & other batters	Tomato
Meat loaves, croq.	Dessert
Salads, garnishes	Beverage syrups
Advance veg. prep.	Ice cream base
Grated cheese, rind	Quantity cooking:
Salad dressings	Dried fruit Soup
Potatoes, eggs	Cereals Stew
Casserole dishes	

REFRIGERATION OF FOODS:

<u>Must be</u>	<u>Can be</u>
Dairy products	Cabbage, cucumbers
Fresh meat	Fresh citrus fruit
Frozen foods	Peaches, pineapple
Left-overs, ckd.	Pears, cantaloupe
Open canned goods	Watermelon
" bottled gds.	Bread, cake, pie
Fresh veg's.	Coffee, chocolate
Fresh fruits	Carbonated bev's
	Peanut butter
<u>Must not be</u>	Salad dressing
Bananas	Pickles, olives

FOODS TO BE STORED -	TEMPERATURE	HUMIDITY
Frozen foods	0-15°	0
Meats, fish, fowl	34-37°	80-90%
Milk, beverages	38-40°	
Butter, staples	40-43°	Moderate
Left-overs, puddings	40-43°	Moderate
Veg's., fruits, eggs	40-45°	85-95%

FOOD STORAGE IN CONVENTIONAL REFRIGERATOR:

1. Frozen food: In frozen-food container
2. Meat: Unwrap, cover loosely
3. Milk: In clean, covered container
4. Butter: In butter dish or freezer paper
5. Left-overs: Cover
6. Batters: Cover
7. Eggs: Cover unless used soon
8. Fruits: Berries - unhulled, unwashed, in shallow pan; cover loosely.
All others washed & covered except short-time storage of plums, pears, citrus fruits.
9. Vegetables: Cover. Leave corn in inner husks; peas, lima beans in pods or shell late as possible & hold in covered jar. Cabbage, cucumber might be left briefly uncovered.

Avoid cutting fruits, veg's., meats in advance

HOW TO KEEP MEAT:

Not to be frozen:

- Unwrap; wipe with damp cloth; dry
- Place in container
- Cover loosely with waxed paper;
- Or place in meat keeper
- Use fish, ground & variety meats in 24 hours

To be frozen:

- Wrap in waxed paper; separate portions
- Place in tray on bottom shelf of freezer
- Set control at coldest position
- Reset to colder than normal later

Poultry: clean, wash, leave whole

FOR GOOD FROZEN DESSERT:

1. Follow good recipe--use cold ingredients
2. Whip thin cream lightly
3. Beat egg whites medium-stiff
4. Freeze rapidly--wet trays on bottom
5. Crush and drain fruits used
6. Chill bowl, beater; beat well
7. Raise temperature after frozen
8. Cover with waxed paper for storage

Ice cream: Stir once during freezing

Ices: Stir twice during freezing

Sherberts: Stir twice during freezing

Mousses: No stirring during freezing

Parfaits: No stirring during freezing

FOR SMOOTH DESSERTS:

Increase air content:

Whipped cream or evaporated milk

Beaten egg whites, gelatin

Increase viscosity:

Cornstarch Gelatin Cookie crumbs

Corn syrup Egg yolks Flour

Increase sugar

$\frac{1}{4}$ c. sugar to 1 c. liquid is enough

Decrease water (milk and fruit juice)

$\frac{3}{4}$ c. custard to 1 c. cream

VARY ICE CREAM BY USING:

Cooked dried fruits	Coffee
Cooked-juice syrup	Chocolate syrup
Fruit sauces, butters	Caramel, butterscotch
Preserves	Toffee candy - rolled
Mashed fresh fruits	Peppermint - rolled
Fresh juice, rind	Peanut Brittle - rolled
Brown sugar	Nuts
Maple sugar	Crackers, cookies
Honey, molasses	Coconut

CARE OF REFRIGERATOR:

1. Open and close door by handle
2. Store only clean things in refrigerator
3. Wipe up spillage immediately
4. Avoid acid fruits touching enamel
5. Don't use sharp instruments on freezer
6. Defrost when $\frac{1}{4}$ " thick: clean & dry;
empty drippage; refill trays; re-set
7. Avoid using harsh abrasives
8. Check gasket, hinges for tightness
9. Touch up scratches (see dealer)
10. Check up regularly & if motors runs a lot
11. Empty, clean, open door for storage
 Open unit - call serviceman in
 Sealed unit - no attention, no oiling
12. Oil open unit according to instructions

CARE OF REFRIGERATOR -- CLEANING

Interior: 1 T soda to 1 qt. warm water
 Remove food, equip. Wash; dry
 Use soapy water on shelves, containers
 Avoid hot water on trays, glass

Gasket: Use warm water, mild soap, clean cloth
 Rinse carefully. Wipe very dry

Exterior: Use warm soapy water; rinse, dry
 Wax 2 or 3 times per year; polish

Condenser: Disconnect refrigerator. Clean
 with whisk broom or vacuum cleaner

COST OF OPERATION DEPENDS ON:

Insulation	Food stored
Location	Quantity
Ventilation	Temperature
Temperature	Wrong containers
Inside	Crowded shelves
In room	Covering food
Ice on unit	No. of ice cubes
Dirty condenser	Desserts frozen
Gasket condition	Unnecessary refrigeration
Size	Opening door

COOLING LOAD:

Opening and closing doors	5%
Cooling foods and liquids	18%
Leakage (insulation joints)	77%

ELECTRIC COOKING EQUIPMENT

SELECTION, OPERATION, AND CARE POINTS

ELECTRICITY FOR COOKING HEAT:

Wires made of certain metals, in this case nickel chromium, offer resistance to the passage of electric current; this resistance takes the form of heat.

ELECTRIC COOKERY ABC'S:

Accurate	Efficient
Cool	Fast
Clean	Healthful
Convenient	Safe
Dependable	Simple
Economical	Time-saving

COMPARATIVE COST: ELECTRICITY-BOTTLED GAS

Electricity		Bottled gas
3¢ per kwh.	=	10¢ per lb.
2½¢ per kwh.	=	8 1/3¢ per lb.
2¢ per kwh.	=	6 2/3¢ per lb.

1 kwh. equals about .32 lbs. LP* gas

100 kwh.	32 lbs.
2½¢	8½¢
\$2.50	\$2.72

TYPES OF ELECTRIC COOKING EQUIPMENT:

Hotplate -----	\$ 5 - \$30
Roasterette or casserole	\$ 5 - \$10
Roaster -----	\$30 - \$65
Range:	
Portable -----	\$30 - \$100
Apartment -----	\$125 - \$175
Standard -----	\$175 - \$375

SELECTION POINTS - HOTPLATE:

1. Sturdy construction
 2. One unit at least 1000 w.
 3. Three-speed switch
 4. Durable finish (porcelain, chrome)
 5. Double unit preferable
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OPERATION OF HOTPLATE:

Use on appliance, not lighting circuit
Start on high. When steaming vigorously turn to low or off. Keep food covered. Time
Use high-wattage hotplate for canning

CARE OF HOTPLATE:

Open unit: Invert tin pie pan, sprinkled with water, over it. Turn to high 10 min.
Protect from salt, soda, sugar, soap, acid, metal, sharp instruments, sharp blows.
Avoid getting grease or water on cord.

* Liquified petroleum.

SELECTION OF ROASTER:

Finish: good enamel - white, black, ivory
Handles: easy to grasp, heat-resistant
Size: larger size is more practical
Shape: rectangular shape is preferable
Insulation: 1-2" rock or glass wool
Thermostat: switch marked with temp's.
Wattage: 1,000 - 1,320 w., highest better
Inset pans: ovenware, glass go to table
Rack: adjustable, sturdy, simple
Broiler: grid in well better than lid type
Lid: glass panel; aluminum or chrome-plate
Cord: rubber covered

OPERATION OF ROASTER:

Place on table of good-working height
Locate in cooking center, if possible
Use only on appliance circuit
Preheat roaster, or grid, for frying
Preheat for baking, large inset pan in place
Close adjustable vent during preheating
Use cold start for oven meals, roasting
Add 15-30 min. to recipe time for cold start
 $\frac{1}{4}$ c. water for green veg's., $\frac{1}{2}$ c. for starchy
Place meat for broiling no closer than 2"

SELECTION OF ELECTRIC RANGE:

Table-top desirable, height varies
Unit body construction - sturdy, braced
Location of work space, units, oven, vent
Acid-resisting porcelain enamel top
Well-labelled switches; closed units
Racks and drawers--lock and easy to move
Large well cooker; drop broiler pan
Evaluate special features, use vs. cost
Water heating--kitchen heating problems

TYPES OF OVENS & OVEN UNITS:

Ovens: One unit
Two unit: bottom baking heat
top and bottom heat
Types of units: open coil
tubular encased

OVEN SELECTION:

Size: 18-20" deep, 14-17" high, 15-17" wide
Liner: rounded corners, seamless, porc. enamel
Door: tight, counter-balanced, broiler stop,
hinged at bottom, well-designed latch
Racks: non-tilt, non-slip rail, locking
Shelf positions: More than 5, or rev. rack 2"
Broiler: under top unit, pref. deep pan
Good insulation; well-located vent
Well-labelled thermostatic control

TYPES OF SURFACE UNITS:

Open: open-labyrinth
enclosed labyrinth
Closed: encased; tubular or rod, ring

SWITCH POSITIONS:

High: start steaming, frying, pressure cooking
2nd: continue frying
3rd: cooking without watching, pressure cooking
melting butter, continue deep-fat frying
4th: continue cooking after steaming
5th: keep food warm, continue cooking

SURFACE COOKING UTENSILS:

Fit unit:	Short side handles
2 or 3 qt.--6" unit	Heat-resistant handles
4 or 5 qt.--8" unit	Recessed knobs on lid
Flat bottom:	Dull or black bottom
Straight sides	Polished sides
Medium weight	Steam vent
Tight covers	Easily cleaned
Useful in oven too	

ECONOMICAL USE OF SURFACE UNITS:

1. Serve one-dish meals
 2. Use low heat instead of double boiler
 3. Use small units most; have pan fit
 4. Use 1/4-1/2 c. water (or 1/8-1/4" in pan)
 5. Use flat-bottomed, tightly covered pan
 6. Put pan on unit, then set switch
 7. Turn down or off when steaming
 8. Avoid lifting lid and stirring
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USES OF WELL COOKER:

1. Cooking less-tender cuts of meat
 2. Complete meals of meat, veg's., dessert
 3. Steaming veg's., puddings, brown bread
 4. Soup, chili, stew
 5. Deep-fat frying
 6. Cooking cereals, dried fruits
 7. Baking potatoes, squash, beans
 8. Making casserole dishes
 9. Reheating rolls or biscuits
 10. Sterilizing jelly glasses and baby bottles
 11. Making a large quantity of cocoa
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OVEN OPERATION POINTERS:

Select foods using same time and temp.
Use covered pans, $\frac{1}{4}$ - $\frac{1}{2}$ c. water on veg's.
Cook tender meat in shallow, uncovered pan
Meats & veg's. on bottom; dessert on top
Allow space between pans and pans & walls
When using timer, choose foods that can wait
For baking:
 Stagger pans for good heat circulation
 Avoid use of black or enamel pans

ECONOMICAL USE OF OVEN:

1. Use oven to full capacity
 2. Best to have foods at room temp.
 3. Adjust racks before preheating
 4. Preheat only until light goes out
 5. Bake low temp. foods first
 6. Time. Don't overcook. Don't peek
 7. Use stored heat
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SETTING OVEN THERMOSTAT-SWITCH

Broiling: Turn to "Broil"
Preheat: Turn to "Broil" first; then
 set baking temp. immediately
Timed Bake: Set at temp. required
 Follow directions for timer

USE OF OVEN SWITCH POSITIONS:

Preheat: Rapid heating of oven
 Rare roasts
Bake-T & B: Most baking
 Oven meals
Bake-B: Canning*; large meals
 Quantity baking
Slow broil: Well-done thick steak,
 chicken, chops**, toast
Speed broil: Rare steaks

PREHEAT OVEN FOR:

Cakes--some types Cookies
Quick breads Pastry

PREHEATING OVEN UNNECESSARY FOR:

Oven meals Yeast bread
Cakes--some types Roasting

POOR OR UNEVEN BROWNING DUE TO:

1. Oven not level
 2. Black or enamel utensils
 3. Pan too large or warped
 4. Poor placement of pans
 5. Over-crowding oven
 6. Insufficient heating
 7. Opening door during baking
 8. Poorly fitting door
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* Oven canning not recommended.

** Broiling uncooked pork (unless frozen) not recommended.

BROILING:

1. Use tender meat, cut fat edges
 2. Brush meat, veg's. with fat
 3. Sprinkle fruits with sugar
 4. Do not preheat oven or pan
 5. Adjust rack
 - Thin or rare meat $1\frac{1}{2}$ -2"
 - Meat, veg's., fruits 3 -4"
 - Fish, chicken, meat 4 -5
 6. Leave door ajar
 7. Time and turn when half done
 8. Do not store broiler pan in oven
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CARE OF RANGE:

Rotate use of surface units

Avoid twisting wires to surface units

Pull straight out on oven units

Avoid overheating

Enamel: protect from spills & acids
sudden temp. changes, scratches,
blows, harsh abrasives, crazing

Cooker: do not heat empty or boil dry
do not store foods in cooker
cool well before storing cooker

Oven: open door to dry after using
avoid leaning on door

CARE OF RANGE - CLEANING:

Remove spillage immediately - paper, dry cloth

Wash when cool - warm soapy water. Rinse dry

Trim: polish with whiting or silver polish

Units: burn spilled food; remove with soft brush
wash closed units if necessary

Rims: whiting or 00 steel wool for spots

Reflectors: remove & wash or wipe off as pan

Drip tray: remove & wash or wipe when necessary

Well: wipe lining with damp cloth, dry
wipe lid with damp cloth if insulated

Oven unit: char clean; use soft brush, if nec.

Liner: use weak solution ammonia
fine abrasive or very fine steel wool
